

WHAT I CLAIM AS MY INVENTION IS:

1. A pump assembly including a body; a piston pump in the body; said pump including a piston bore in the body, the bore having an outer end at a side of the body; a piston in the bore; an eccentric; a drive connection between the eccentric and the piston so that rotation of the eccentric moves the piston along pumping and return strokes in the bore, said bore and piston defining a variable volume pumping chamber; a pumping chamber inlet valve; a plug assembly closing the outer end of the piston bore, the plug assembly including a sleeve having an outer end and an inner end, the inner end of the sleeve having a tapered interior wall, the sleeve located in the outer end of the bore so that the sleeve inner end and tapered inner wall are within the piston bore and the sleeve has a tight fit in the piston bore; a tapered surface on the inner wall of the inner end of the sleeve; a valve seat having a tapered outer wall engaging the sleeve tapered surface to form an interference fit between the seat and the sleeve whereby the sleeve is deformed against the wall of the bore; a poppet member engaging a side of the valve seat away from the pumping chamber; a spring biasing the poppet member toward the seat; a plug driven into the sleeve and into the piston bore to form a joint between the plug and sleeve and strengthen the joint between the sleeve and the wall of the piston bore; an opening in the sleeve between the seat and the plug; and a high-pressure outlet passage in the body communicating with the opening in the sleeve.

2. The pump assembly as in claim 1 wherein the sleeve outer end extends outwardly of the body and is deformed into the plug.

3. The pump assembly as in claim 2 wherein the plug includes a circumferential undercut located outwardly of the body and the sleeve outer end is deformed into the circumferential undercut.

4. The pump assembly as in claim 1 wherein the interior wall of the piston bore, the exterior wall of the sleeve, the interior wall of the sleeve above the tapered interior wall and the exterior wall of the plug are cylindrical.

5. The pump assembly as in claim 1 wherein the interior wall of the bore, the exterior wall of the sleeve, the interior wall of the sleeve above the tapered interior wall and the exterior wall of the plug are not threaded.

6. In a high-pressure pump for pressurizing liquid used to actuate components of an internal combustion engine, the method of closing the outer end of a piston bore comprising the steps of:

A) pressing a sleeve into the outer end of the piston bore to locate a tapered surface on the inner wall of the sleeve in the piston bore;

B) positioning a valve seat into the sleeve so that a tapered surface on the seat engages the tapered surface on the sleeve to form a tight-wedged connection between the seat and the sleeve and deform the sleeve against the wall of the piston bore; and

C) driving a plug into the outer end of the sleeve to close the outer end of the piston bore, form a joint between the plug and

the sleeve and strengthen the joint between the sleeve and the piston bore.

7. The method of claim 6 including the step of:

D) deforming the outer end of the sleeve into the plug to prevent pressure dislodgement of the plug from the piston bore.

8. The method of claim 6 including the step of:

D) deforming the circumference of the outer end of the sleeve into a circumferential undercut on the plug outwardly of the body.